

AMENDMENTS TO THE DRAWINGS

Please replace FIG. 3 with the attached Replacement Sheet.

FIG. 3 is being amended to remove reference numbers 34 and 45 which are not identified in the specification.

REMARKS

Claims 1-20 are pending in the application. Claims 1-20 are rejected. Claims 1-10, 12, 15, 19 and 20 have been amended. New claims 21-29 have been added. Applicant respectfully requests reconsideration of the claims.

Objections to the Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 34, 45, and 66.

Reference characters 34 and 45 have been removed from the amended drawing shown as “Replacement Drawing” in this response.

The specification has been amended to include reference character 66. No new matter has been added.

Claims Rejections - 35 U.S.C. § 102

Claims 1 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yagi (U.S. Patent No. 6,188,202).

The rejection is traversed. Claim 11 discloses a method for charging a battery, comprising: detecting a charging session where a battery charger starts charging a battery located in a vehicle; and automatically activating a fan in the vehicle to blow air on the battery when the charging session is detected, whereby the fan continues to blow air on the battery after the charging session is completed.

Yagi teaches that the fan is only activated during an ordinary charge at step S34 (col. 6 lines 58-65 and Fig. 7, S51) or during a stop charging operation at step S33 (col. 7 lines 1-6 and Fig. 7, S61) and not automatically when the charging session is detected at step S32 (Fig. 7). On the contrary, Figure 7 expressly shows that the fan is not activated if an undercharge mode S41 is selected, or in fact anytime the temperature is less than 35 degrees Celsius, as shown at step S34. Claims 1 and 11 therefore disclose a less complicated method of activating the fan that includes different steps than taught by Yagi. Furthermore, Yagi does not teach the fan continuing to blow on the battery after the charging session is completed, and instead the fan stops blowing at the box designated as END in Figure 7.

Claims 19 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kadouchi (U.S. Patent No. 5,652,500).

The rejection is traversed. Claim 19 is allowable for the same or similar reasons as claims 1 and 11. Claim 20 discloses battery charging system according to claim 19 including switching circuitry in the vehicle that automatically maintains or connects power from the battery charger to the fan and automatically disconnects power from the battery charger from other vehicle electrical equipment while the battery charger charges the battery.

Kadouchi does not teach what is powering the fans. For example, it could be the battery or a separate power source associated with the fans. The cooling apparatus shown in Figure 14 is shown in isolation from the rest of the system and does not teach how or if the fans interact with the charge apparatus 3 shown in Figure 2. Furthermore, Kadouchi does not teach how or when the fans are activated; Kadouchi includes a single reference to the fans in the background section, indicating that the input and exhaust fan serve to pass air through the battery (col. 2, lines 1-5).

Claims Rejections - 35 U.S.C. § 103

Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yagi in view of Perez (U.S. Patent No. 6,449,870).

The rejection is traversed. Claim 3 discloses the system according to claim 1 including an interlock switch that connects the battery charger to a fan circuit or connects the battery to the fan circuit during the charging session.

In addition to the arguments stated in support of claim 11, Perez does not disclose connecting a battery charger to a fan circuit. Figure 5A shows that the battery charger is connected to the battery base portion 16 at jack 50. Perez states that “When the unit is plugged into a power source, the power is immediately supplied to the LED 34 which indicates that the battery has sufficient power to operate the unit” (col. 5, lines 55-57). This suggests that the battery continues to operate the unit even after the unit is plugged into the power source. Furthermore, the switches S1 and S2 in Figure 5A cited by the Examiner do not disclose a means for connecting a battery charger to a fan circuit, but rather switches S1 and S2 allow the fan 22 to be operated alone or in tandem with a heater 20.

Claims 4 and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yagi in view of Kadouchi.

Claim 4 has been amended. Claim 13 depends on claim 11. The rejection of claim 13 is traversed for the same or similar reasons as described above in support of claims 11 and 19.

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yagi in view of Perez, and further in view of Traveis et al. (U.S. Patent No. 6,329,727).

The rejection is traversed. Claim 5 discloses the system according to claim 3 including a filter coupled between the interlock switch and the fan that filters large charge surges from the battery charger from reaching the fan.

The filter disclosed in Traveis is required as “the power supply 16 receives an input power supply voltage VIN substantially in excess of the maximum operating voltage of the fan 22. (col. 2, lines 27-30). Traveis does not disclose a functioning of the filter to filter out large charge surges. Compensating for a *constant* high voltage VIN from a power supply as described by Traveis does not make obvious a filter that filters large charge *surges* in a battery charge system that connects a fan to a battery or a battery charger.

Claims 8, 9, 10 and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yagi in view of Langston (U.S. Patent No. 6,087,805).

The rejection is traversed. Claim 8 discloses the system according to claim 1 wherein the controller predicts an amount of remaining vehicle operating time according to both battery charge information and vehicle operating parameters.

Applicant respectfully disagrees that the invention is made obvious by the references provided by the Examiner. The claim element of predicting a vehicle operating time is not found in or suggested by any of the references. Similarly, Examiner’s reference to replacement of the battery or electrolytes is not persuasive, since this relates to battery life and maintenance as opposed to predicting an amount of remaining vehicle operating time. None of the references teach or disclose predicting whether or not the battery has enough charge to operate the vehicle for the predicted duration, and displaying results of the prediction.


Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Yagi in view of Kadouchi in view of Langston.

The rejection of claim 14 is traversed for the same or similar reasons as described above in support of claims 11 and 19.

For the foregoing reasons, reconsideration and allowance of claims 1-29 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.

A handwritten signature in cursive script, reading "Bryan Kirkpatrick".

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